

Super 8 cartridge projector  
Instruction manual

**BOLEX** MULTIMATIC®



# Description

## 3 vital hints

1. Do not forget to attach the end of the film properly in the core of the reel.
2. Add new cartridges or change the order of cartridges only at the beginning of the projection of a film or during a pause in projection.
3. Should the film stop suddenly, immediately press the still projection key (•) to avoid burning the film, and stop the projector. (See section "Projection troubles".)

1. Cartridge compartment door
2. Intermission lamp
3. Cartridge pressure plate
4. Speed selector
5. Cartridge changing key
6. Film reinsertion lever
7. Forward or reverse projection key
8. Normal speed or slow motion key
9. Still projection key
10. Milled knob for adjusting height by means of front foot
11. Lens cover
12. Light adjustment knob
13. Zoom control
14. Focusing knob
15. Framing knob
16. Red rewind indicator

Power supply:

3 models

- 120 V/60 Hz
- 110—250 V/50 Hz \*
- 220 V/50 Hz \*

Halogen lamp:

- 21 V 150 W (code EJA)
- 15 V 150 W
- 15 V 150 W

\* Not valid for the U.S.A. and Canada.

The 110—250 V/50 Hz model can be adjusted for 60 Hz by your local Bolex dealer.

Lenses available: — Paillard-Bolex Hi-Fi

20 mm / f 1.3

23 mm / f 1.1

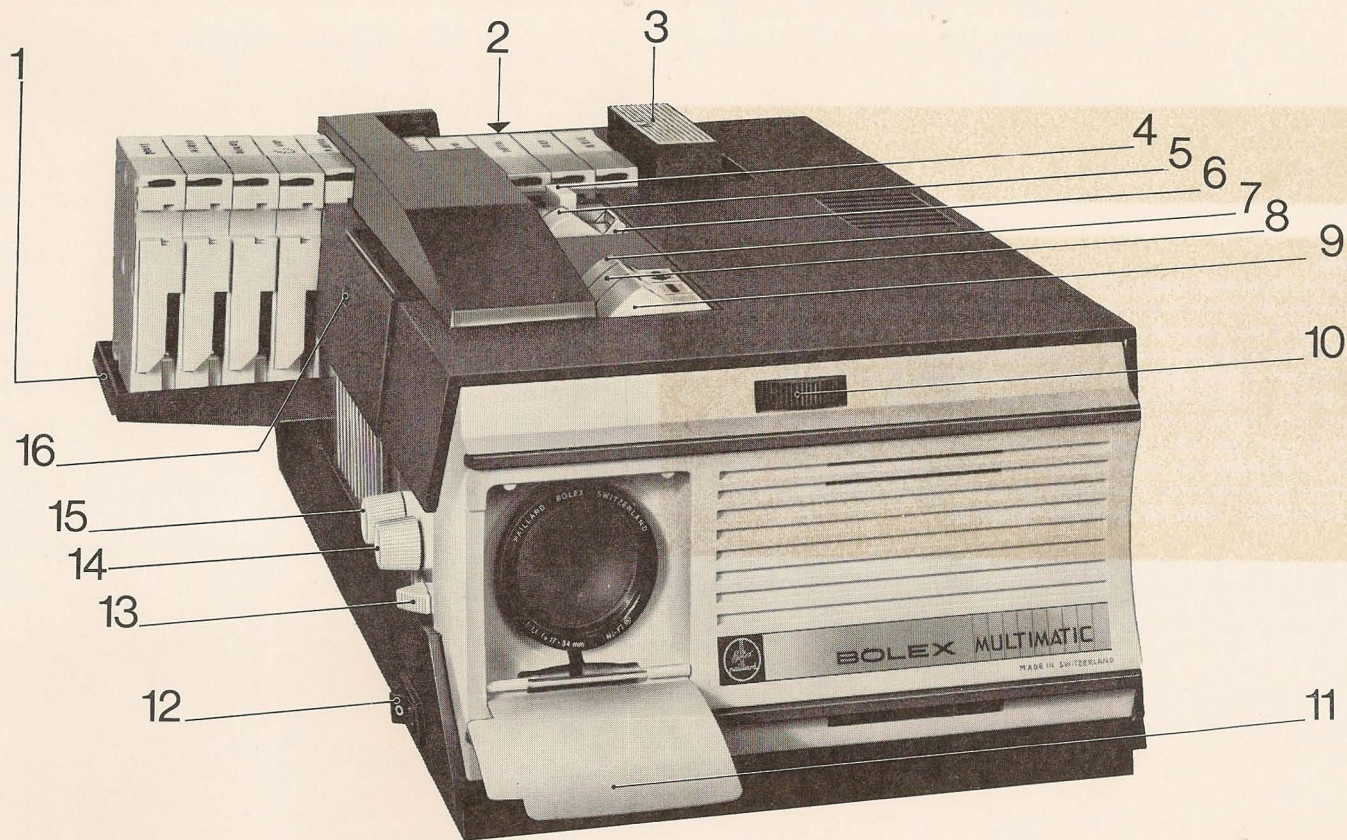
zoom 17—34 mm / f 1.1

— Kern Vario-Switar

zoom 12—30 mm / f 1.3

Bolex International S.A. reserves the right to modify, without prior notification, the design and features of the equipment described in this manual.







# General

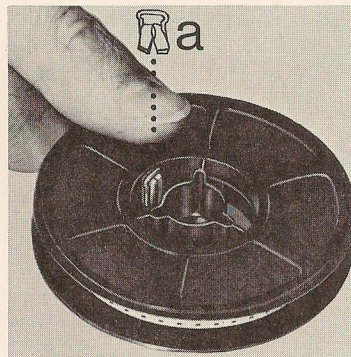
The Bolex Multimatic projector takes both Super 8 and Single 8 films. In order to ensure automatic operation, the end of the film must be attached securely to the core of the reel. The type of clip differs according to the type of reels used. The clips are supplied with the cartridges.

## Remarks

The Bolex Multimatic projector is designed for use with standard 50' reels having a 74 mm diameter and a slot on one side of the rim only. (Reels with a slot extending to both sides of the rim are unsuitable.) Single 8 films must be wound on standard reels. Extra cartridges, containing an empty standard reel, are available from your local Bolex dealer. (See section "Accessories", page 16).

The reel must contain at least 33' of film (50' in the case of film on polyester base, for example Single 8), which corresponds to a diameter of about 2". On the other hand, it should not be too full; always leave a space of at least 1/5th inch between the film and the sides of the reel, which corresponds to a maximum of 50 feet of film (80 feet of film on polyester base).

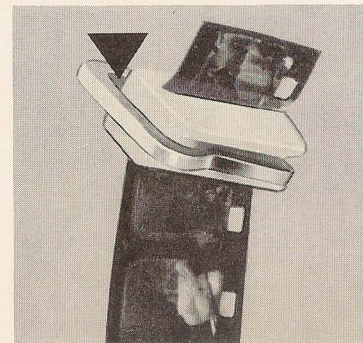
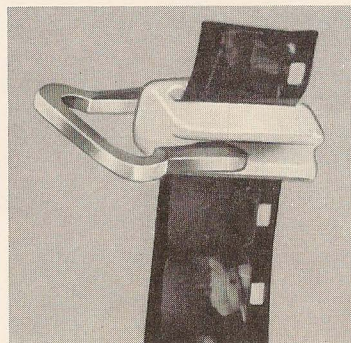
## Reel without built-in clipping device



With the reel laying flat on a table, full rim towards the top, place clip (a) over both sides of the end of the film protruding in the core of the reel and press down spring.

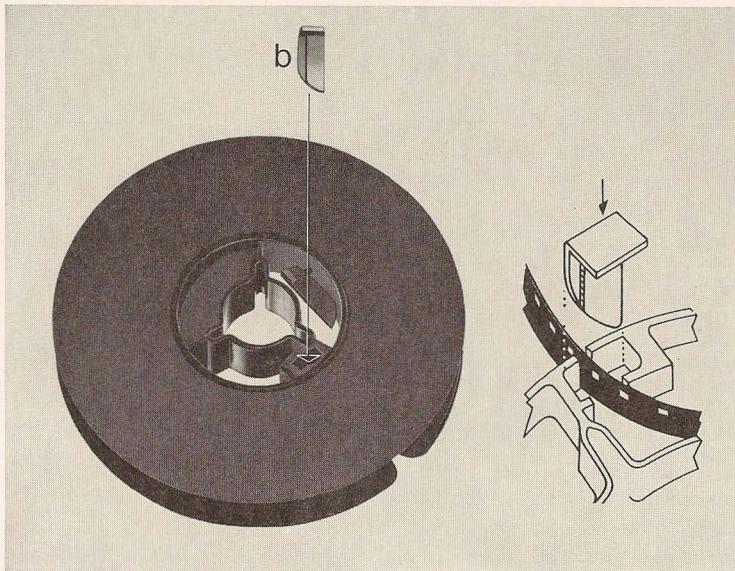
Make sure that the clip grips the film correctly and that it does not project beyond the sides of the reel.

For removing the clipping device, slip a pointed object under the spring, as indicated by the arrow, while holding the clipping device firmly with the fingernail.



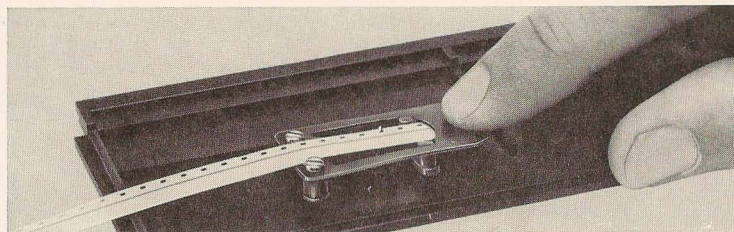


## Reel with built-in clipping device



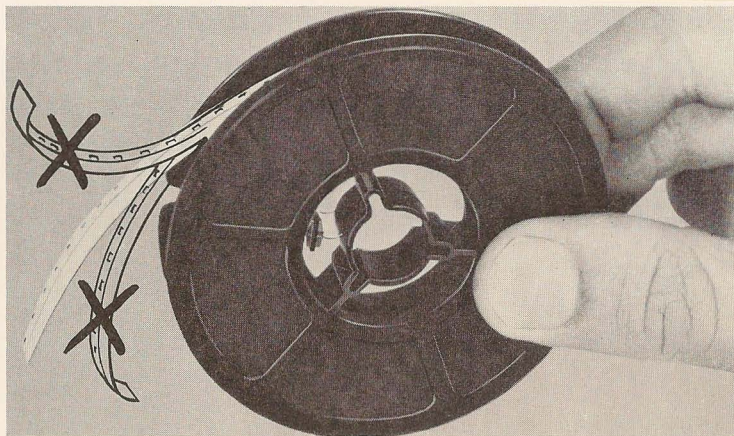
Only the angle clip (b) may be used.  
Push clip (b) fully home.

## Cutting the film



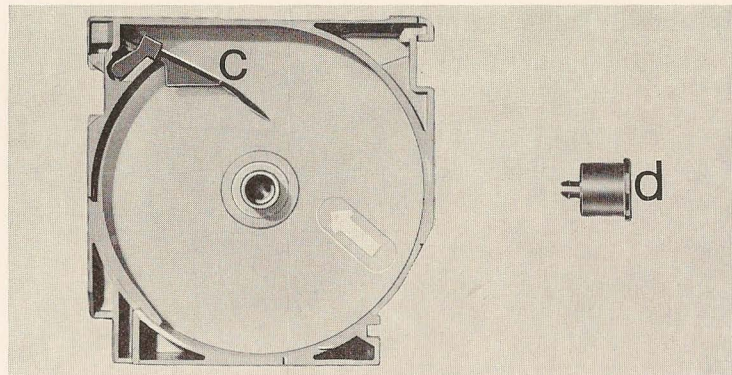
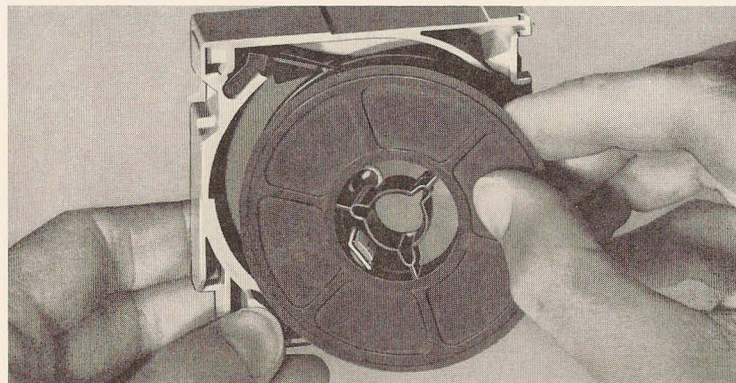
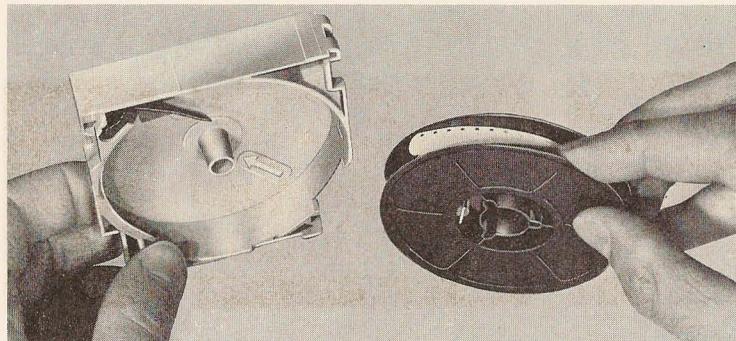
Remove the side cover with the film cutter inside (see section "Maintenance", page 14). Cut the beginning of the film leader. Throw away the cut off part. There must be at least 1 ft. of leader before the first splice in the film.

In addition, the leader must be curved in the same direction as the film on the reel. If it curves too much or curves in the opposite direction, give it the correct curve by sliding it between thumb and forefinger.





# Inserting the reels in the cartridges



c) film guide

d) plug

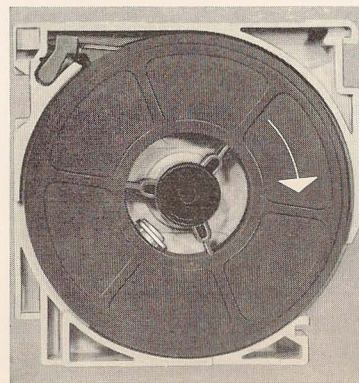
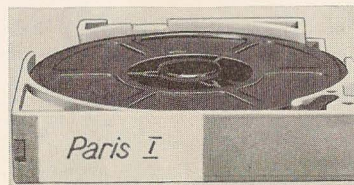
Insert the reel into the cartridge at a slight angle, with the film tightly wound, in the direction of the engraved arrow, in the bottom of the cartridge, the film perforations towards the bottom of the cartridge and the film guide (c) inserted between the sides of the reel.

Press the plug (d) firmly onto the cartridge spindle.

Make sure the reel turns freely inside the cartridge (in a clockwise direction).

The film is now permanently in the cartridge. Attach a label, showing the subject or title of the film, onto the space provided on the cartridge.

(A strip of adhesive labels is supplied with the cartridges.)



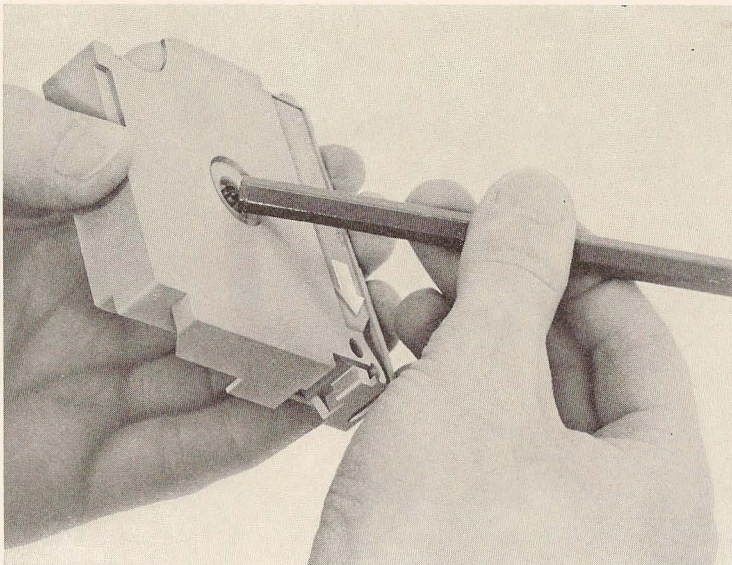


## Preparing for projection

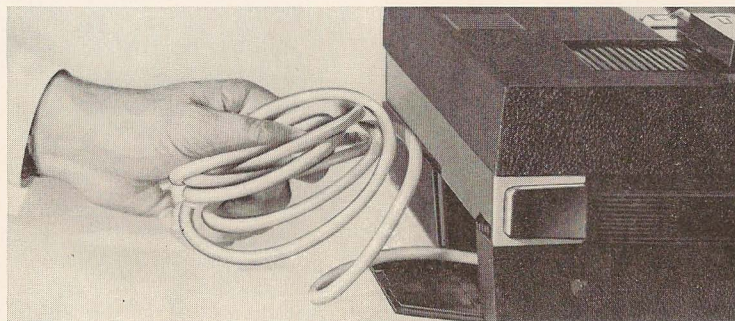
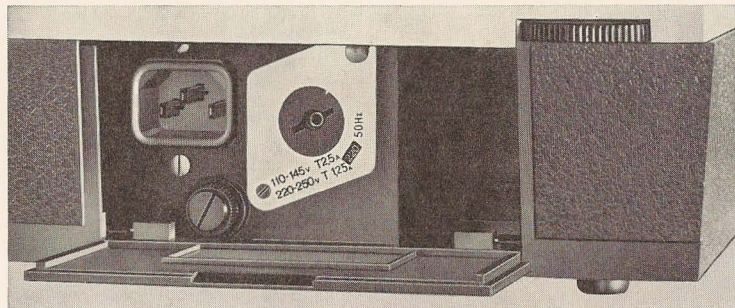
(Not valid for the U.S.A. and Canada)

On the 110—250 V model only set the voltage selector by means of a coin and, if necessary, insert the fuse corresponding to the voltage. For voltages up to 145 V: 2.5 A fuse. For voltages above 145 V: 1.25 A fuse. (See section "Maintenance", page 15.)

Plug power cable into outlet. The intermission lamp lights up.

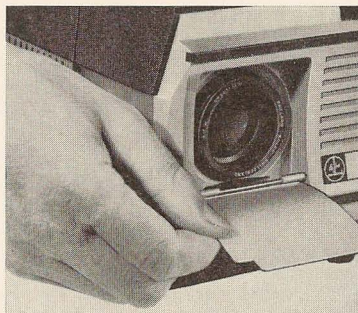


If you want to remove the reel from the cartridge, press obliquely and push the end of a pencil firmly against the spindle of the plug.

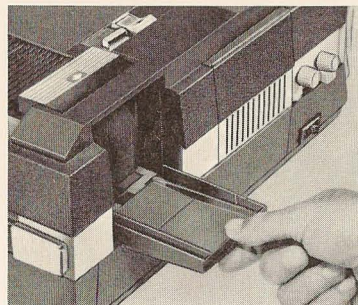
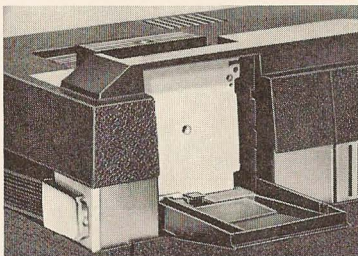




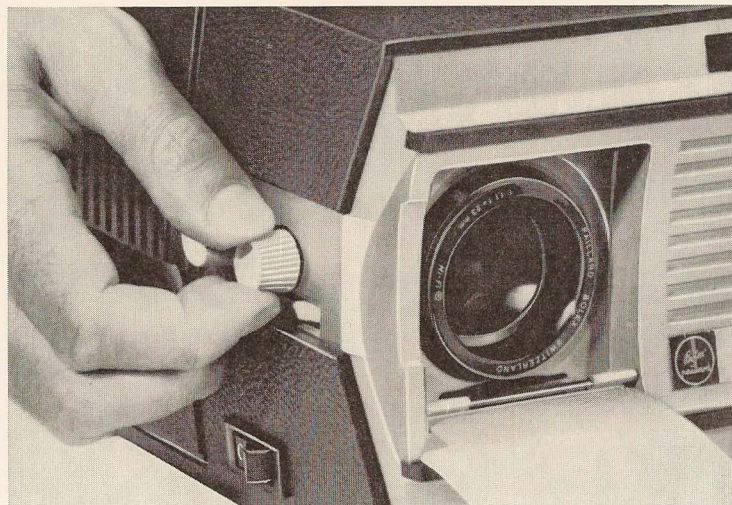
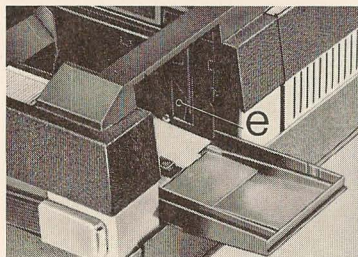
Open the lens cover.



Pull down the cartridge compartment door. (This starts the projector, switches on the projection lamp, and turns off the intermission lamp.)

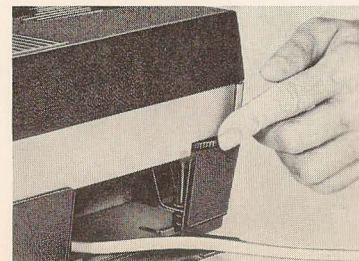


Insert an empty cartridge, or keep plate (e) depressed.



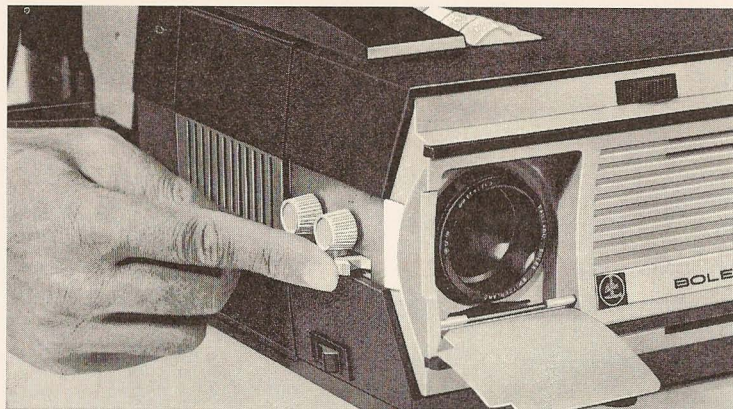
Focus the frame of the illuminated area roughly on the screen.

Adjust the height and level the image.

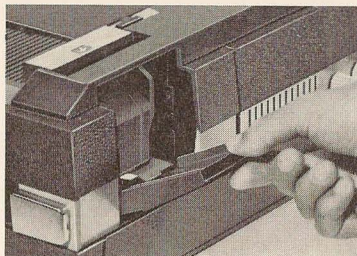




If your projector is equipped with a zoom lens, adjust the image to the desired size by moving the zoom control.

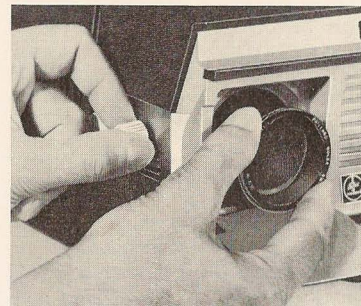


Close the cartridge compartment door and remove the empty cartridge, if one was inserted.



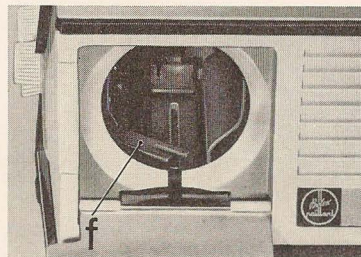
## Changing lens

For changing the lens, turn the focusing knob clockwise as far as it will go, which will release the existing lens. Insert the new lens. With zoom lenses, insert the lug on the mount holder into the fork (f) of the zoom control lever. Press the lens completely into the holder against the stop. When the zoom lever is operated, the fork (f) should move the zoom components inside the lens while the focusing knob moves the entire lens.



### Important

Never place an object which blocks the fan opening on the projector.

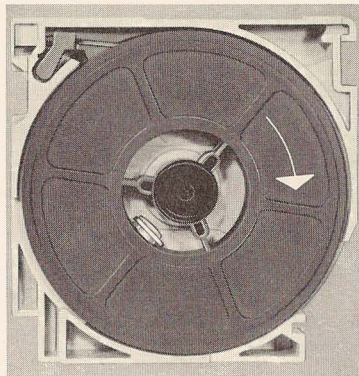




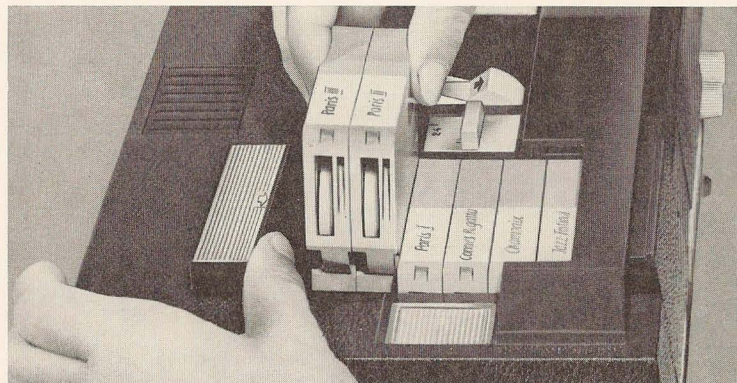
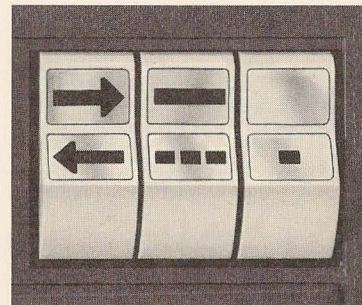
# Projection

## Remark

If the cartridges have been shaken during transport, especially with partly filled reels, the film layers may have worked loose and consequently loading may not take place automatically. As a safety precaution, therefore, it is recommended to tighten the films before projection by manually turning the reels clockwise.

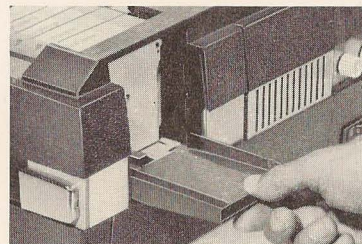


Press the normal speed key (→).

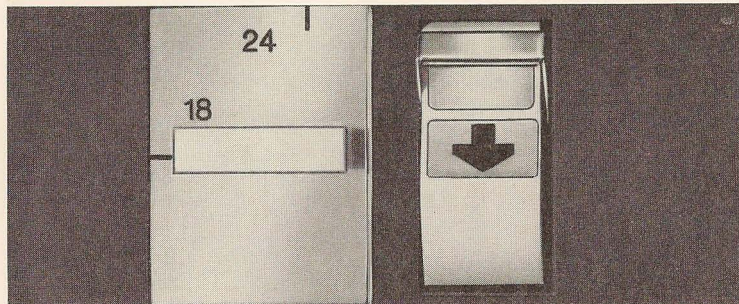


After pushing back the pressure plate, insert the cartridges in the desired order. As much as 6 cartridges can be inserted into the projector. Insert them in two steps, as shown in the illustration above.

Lower the cartridge compartment door. The film will automatically load (if it does not, see remark on opposite page).





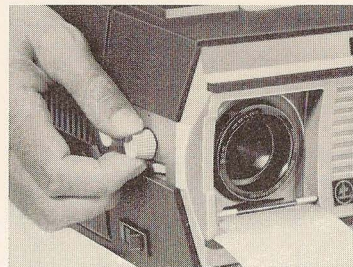
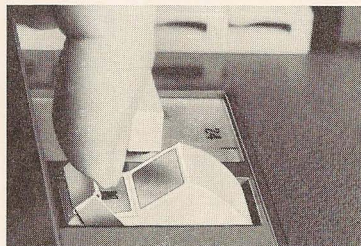
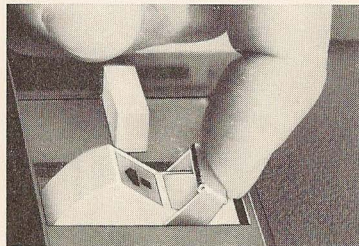


Set the speed selector to 18 or 24 f.p.s.

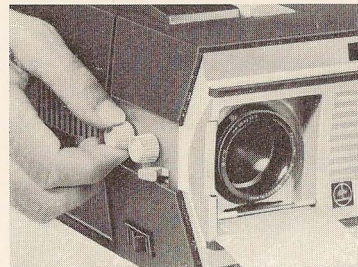
**Remark**

Should a film not load automatically, move the film reinsertion lever over for 3 seconds. Do this however only when the previous film has been rewound (red warning light off).

If this lever is accidentally moved during projection, the projector will stop, and can be started again only when the lever is released.

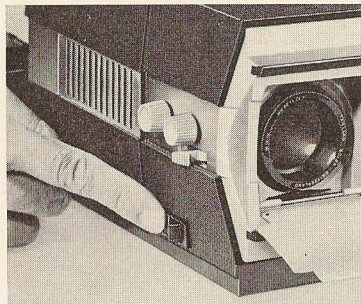


Focus the picture.

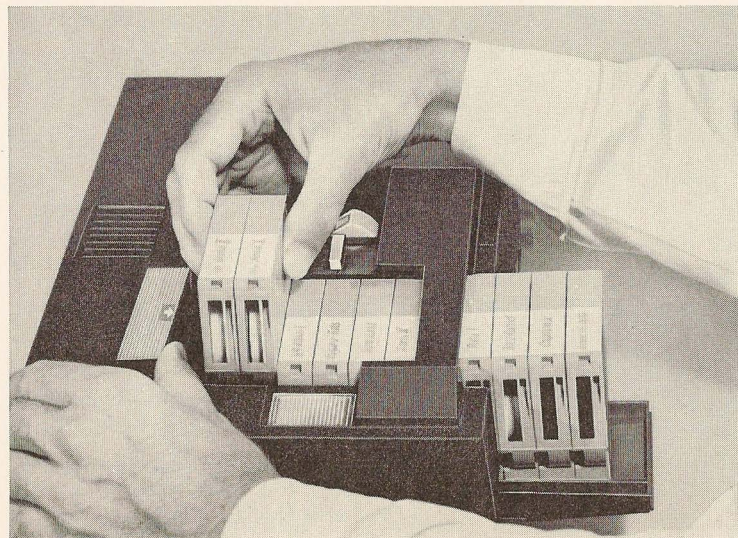


Frame the picture.





Select the most satisfactory image brightness. (The lower brightness prolongs the life of the lamp).



The films are projected and rewind automatically, one after the other, without any manual operation. During the change from one film to the next, the light is automatically reduced by a shutter.

During projection, you may add new cartridges or change the order of the cartridges.

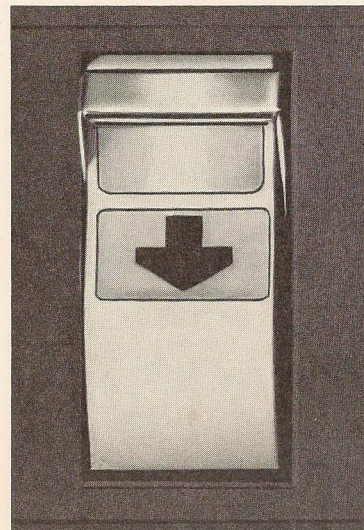
Do this however only at the beginning of the projection of a film, i.e. right after a cartridge has changed, because the pressure plate must not be moved while the projector is changing cartridges.

Projected cartridges may be removed at any time after they have left the rewinding compartment.

To stop projection for a moment, close the cartridge compartment door. The intermission lamp lights up automatically.

You can reject a partially projected film and go immediately to the next cartridge by pressing (1 second at least) the cartridge changing key (↓). (Do not get in the way of cartridges coming out of the compartment.)

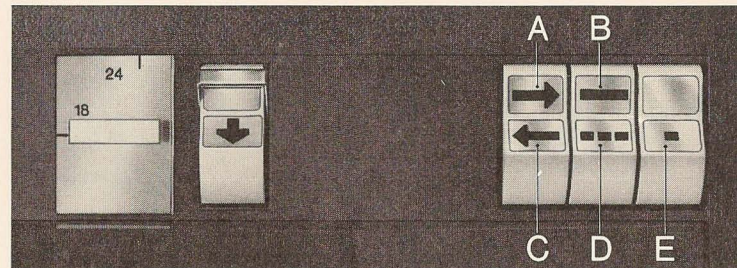
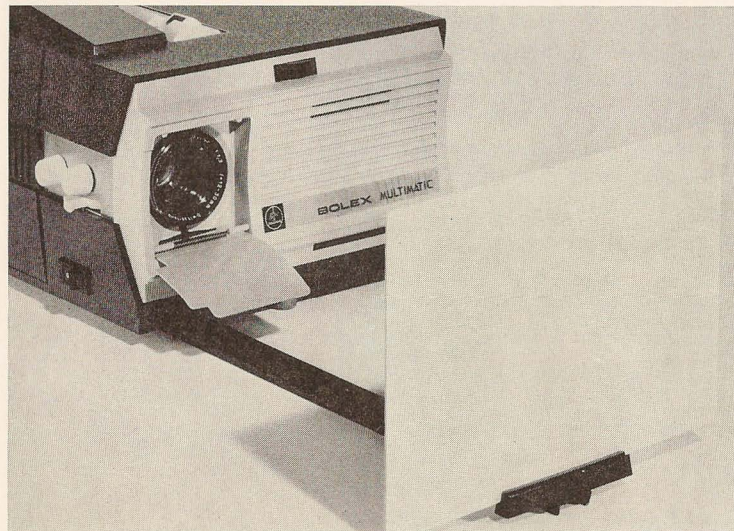
If you press this key before the previous film has been completely rewound (indicated by the red warning light on the side of the projector), the cartridge will not change until rewinding is completed.





At the end of projection, wait until the last film has been rewound — i.e. until the red light goes out — before removing the last cartridge. Never leave partially rewound or projected film in the projector, as the leader might become distorted and affect perfect operation.

An incorporated screen holder is provided for rapid film viewing. This can be used if the projector is fitted with a zoom lens. Pull out the holder as far as the stop and place the screen, supplied with the projector, in one of the grooves of the holder. Adjust the focus with the zoom in the wide-angle position. Alternatively, you can place in the holder a ground glass or a sheet of ground acetate, its translucency serving as a screen.



- A. Forward projection.
- B. Projection at normal speed (18 or 24 f. p. s.).
- C. Reverse projection (instantaneous at all speeds). Depress the key completely and hold it down\*.
- D. Slow motion at 6 or 8 f. p. s. ( $\frac{1}{3}$ rd of the normal speed set).
- E. Still projection (for as long as the key is depressed).  
A catathermic filter automatically drops into place between lamp and film.

\* In reverse projection the film is not rewound entirely in its cartridge. Therefore, switch to forward projection before the end of the film has passed through the projection aperture. If this is done too late, the film will stop. You then have two alternatives:

1. If you wish to show the film again:  
with the red warning light off, move the film reinsertion lever over for 3 seconds.  
(See page 9.)
2. If you wish to go on to the next film:  
press the switch (↓) to remove the cartridge.  
If the red warning light is on, the cartridge will not change until rewinding is completed.



# Projection problems and how to remedy them

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## Problem

## Probable cause

## Remedy

A cartridge does not move freely into projection position or is stuck.

a) Inserting new films while a cartridge is being changed.

Stop the projector and remove the other cartridges from the compartment. Rewind by hand the portion of film already engaged, by turning the reel in the cartridge clockwise, and remove the blocked cartridge.

b) Cartridge damaged or bent.  
Label glued on badly.

Replace the damaged cartridge.  
Attach the label only in the space provided.

The film in one of the cartridges is not projected. The cartridge changes normally, but the pictures from the next film do not appear and the screen remains brightly lit.

a) The film is not wound tight enough on the reel.

Move the film reinsertion lever over for 3 seconds. If necessary, remove the cartridge and tighten the film. (See section "Projection", Remark.)

b) Faulty leader on the film.

Remove the reel from the cartridge and straighten or cut the damaged portion of the leader.

The cartridge does not change (no audible click), and the screen remains brightly lit.

The film retaining clip in the core of the reel is missing and all the film is wound up on the take-up reel — check by removing the side cover. (See section "Maintenance".)

Remove the take-up reel (see section "Cleaning") and rewind the film by hand on the original reel. Never leave the film on one of the take-up reels or it will interfere with the loading of another film.

Picture unsteady and cartridge sometimes changes at wrong time.

a) The reel does not turn freely inside the cartridge.

Change the cartridge plug.

b) A take-up reel does not turn freely.

Make sure that the channel cover is properly centered. (See section "Maintenance".)

Cartridge changes at the wrong time.

Film in poor condition (torn).

Remove the damaged portion.

Poor splice.

Make a new splice.



The film breaks during projection.      Poor splice.

Immediately press the still projection key ( - ) to insert the catathermic filter between lamp and film. Without releasing the pressure on the key:

- remove all the cartridges except the one being projected;
- press the key (⬇) to remove the remaining cartridge and rewind the portion of film already engaged. If the red warning light is on, keep the key ( - ) depressed until the previous film is rewound.

Stop the projector by closing the cartridge compartment door. Open the side cover (see section "Maintenance") and remove the projected portion of the film. If it cannot be reached, remove the film channel cover and, if necessary, the take-up reel with the wound-up film.

The cartridge is not changed, and the film stops at the end of projection.      Damaged perforations at the end of the film.

Press immediately on the cartridge changing key (⬇).

The lens cover does not close.      Hinge pin out of position.

Replace the hinge pin under the spring by lifting the latter with the blade of a knife.

## Intensive film projection

(demonstration, training and promotional films)

Films returned from developing are already treated to withstand a certain number of projections without deterioration.

However, a special protective treatment is advisable in the case of Super 8 original films or copies which will undergo intensive projection. This treatment is carried out by specialized laboratories for a modest charge.

The Bolex Multimatic being particularly suitable for the purposes of demonstration, training and sales promotion, we advise you strongly to have this special treatment applied to films which are intended for frequent projection.

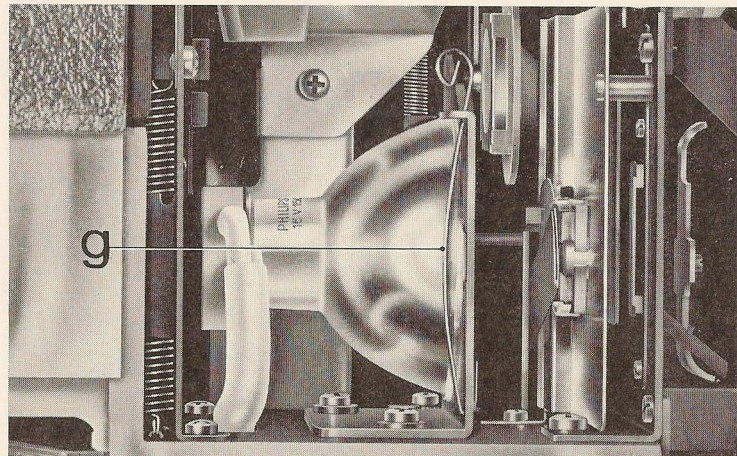
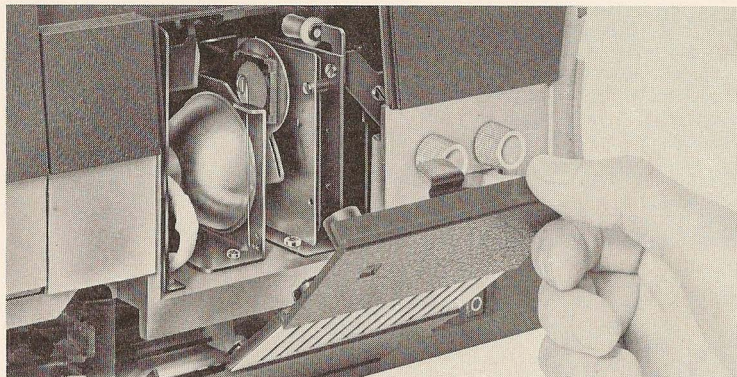


# Maintenance

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## Replacing the projection lamp

Disconnect the projector.  
Remove the side cover. If the lamp is hot, let it cool. Release the spring (g).

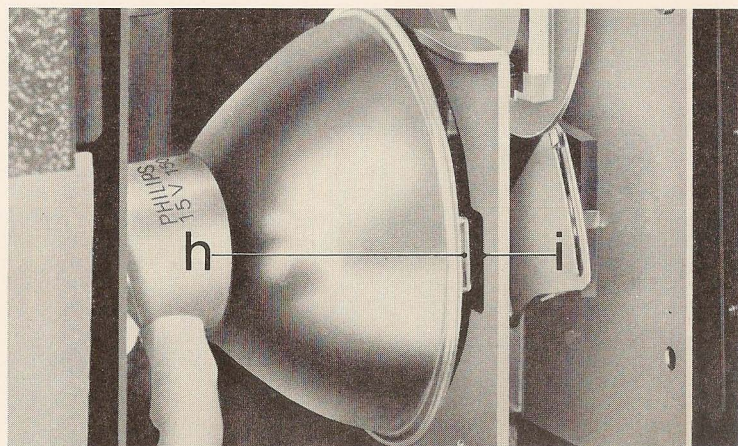
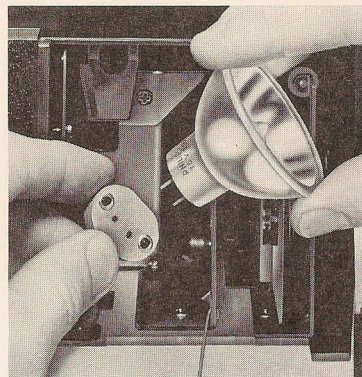


Take the lamp out and remove it from its socket.

Insert new lamp in socket.

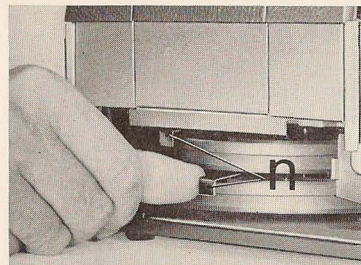
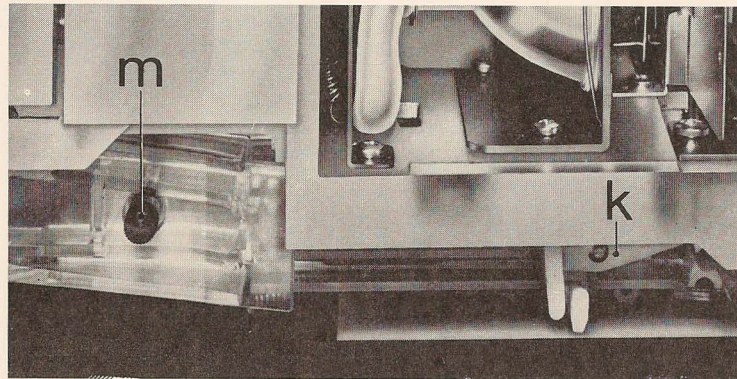
Mount the new lamp by inserting the lug (h) into the slot (i) on the holder, if there is a lug on your lamp. This automatically centers the lamp.

**Note:** Never touch the bulb of the lamp; hold it by the rim of the mirror or the socket.





## Cleaning

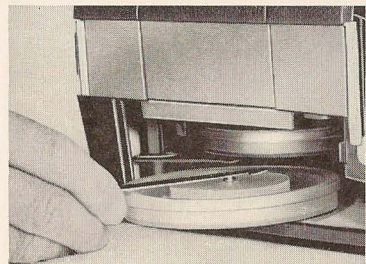


Use the soft brush supplied with the projector to clean the catharthermic glass, the gate, and the edges of the projection aperture. The latter is done after removing the lens.

To clean the film channel and the shift mechanism (k), loosen screw (m) and remove the channel cover. The shift mechanism must be kept perfectly clean, so that the movable part is free to move.

You can also clean the take-up reels by removing them completely. To do this, push levers (n) to the right. When re-inserting the take-up reels, make certain that the levers are correctly positioned and that the reels turn freely.

The lens should be cleaned with a brush or special lens cleaning tissue. (To remove the lens, see page 7.)

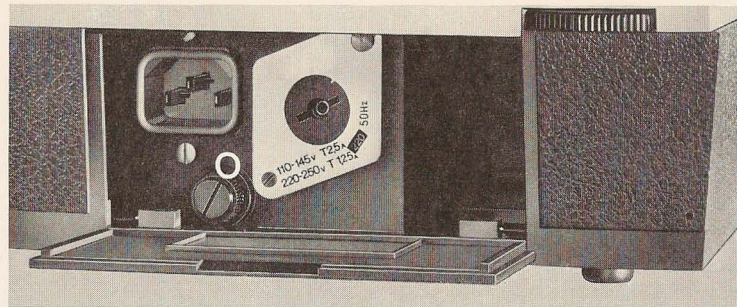


## Replacing the intermission lamp

This 15 W lamp should be changed by a Bolex dealer.

## To replace the fuse (not valid for the U.S.A. and Canada)

The 110—250 V and 220 V models are equipped with a fuse housed inside the power cable compartment. To change the fuse, push the fuse holder (o) in and turn it to the left.



## Lubrication

Self-lubricating bearings and gears make oiling unnecessary. Oiling should not be attempted since it might affect the proper working of the driving mechanism parts.

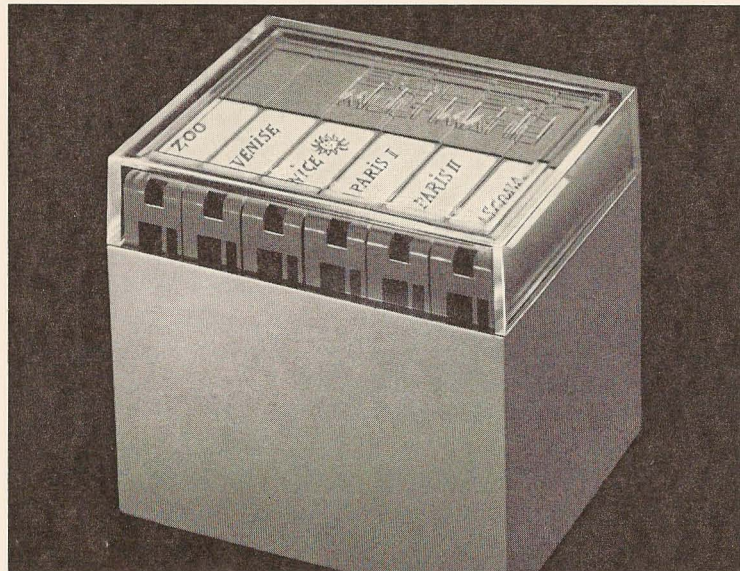


# Accessories available separately

## Cartridge boxes

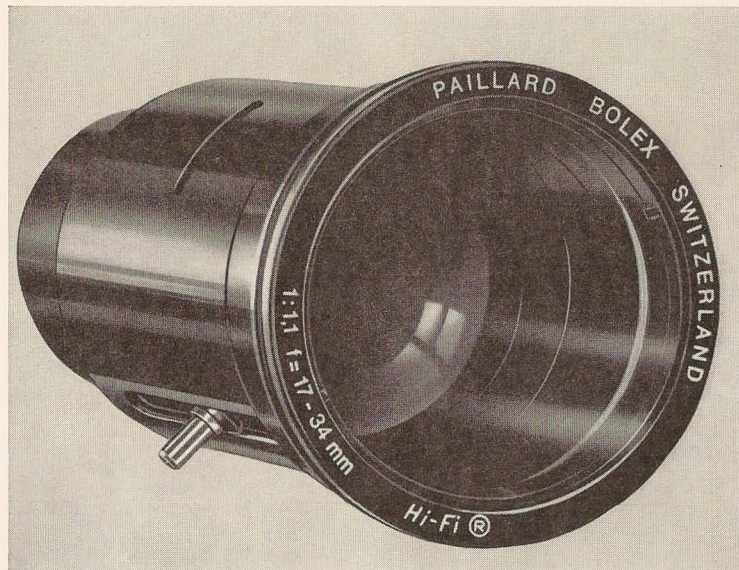
These boxes provide practical storing and filing of your films. You have a choice between two variants:

- Box with 6 empty cartridges
- Box with 6 cartridges each containing a standard 50 ft. reel.



## Lenses

The four lenses available (see section "Description") are outstanding for their large aperture, which guarantees maximum picture brightness, and for their superb corner to corner sharpness.





# Size of the picture on the screen in inches

| Focal Lengths | Projection distance |         |         |         |          |          |          |          |          |
|---------------|---------------------|---------|---------|---------|----------|----------|----------|----------|----------|
|               | 6'6"                | 10'     | 13'     | 16'     | 20'      | 26'      | 33'      | 40'      | 50'      |
| 12 mm         | 33 x 25             | 51 x 38 | 67 x 50 | 86 x 65 | 102 x 77 |          |          |          |          |
| 15 mm         | 28 x 21             | 42 x 31 | 56 x 42 | 69 x 52 | 83 x 63  | 111 x 83 |          |          |          |
| 17 mm         | 24 x 18             | 37 x 28 | 49 x 37 | 61 x 46 | 74 x 55  | 99 x 74  | 123 x 92 |          |          |
| 20 mm         | 20 x 15             | 31 x 23 | 42 x 31 | 52 x 39 | 63 x 47  | 84 x 63  | 105 x 78 |          |          |
| 23 mm         | 18 x 14             | 27 x 21 | 37 x 27 | 46 x 34 | 55 x 42  | 74 x 55  | 92 x 69  | 111 x 83 |          |
| 25 mm         | 17 x 12             | 25 x 18 | 33 x 25 | 42 x 31 | 50 x 37  | 67 x 50  | 83 x 63  | 100 x 76 |          |
| 30 mm         |                     | 21 x 14 | 28 x 21 | 34 x 26 | 42 x 31  | 56 x 42  | 69 x 52  | 83 x 63  | 102 x 77 |
| 34 mm         |                     |         | 25 x 18 | 31 x 23 | 37 x 27  | 49 x 37  | 61 x 46  | 74 x 55  | 90 x 67  |



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